

Trade and Industrial Education
Course: Principles of Engineering
Course Code # 5784
1 Credit

School Year _____

Term: ___ Fall ___ Spring

Student:	Grade:
Teacher:	School:
Number of Competencies in Course: 18	
Number of Competencies Mastered:	
Percent of Competencies Mastered:	

STANDARD 1.0: Students will explore careers available in the engineering and manufacturing areas.

Learning Expectations		Check the appropriate Mastery or Non-Mastery column	Mastery	Non-Mastery
1.1	Investigate possible career paths for engineers and engineering technicians.			
1.2	Examine the potential roles and responsibilities of an engineer or engineering technician.			

STANDARD 2.0: Students will produce engineering designs for a structure.

Learning Expectations		Check the appropriate Mastery or Non-Mastery column	Mastery	Non-Mastery
2.1	Create and interpret engineering designs including bills of materials.			
2.2	Evaluate drawings and material lists.			
2.3	Create models from drawings.			

STANDARD 3.0: Students will produce workable engineering designs according to specifications and within given constraints.

Learning Expectations		Check the appropriate Mastery or Non-Mastery column	Mastery	Non-Mastery
3.1	Design a mechanism project.			
3.2	Execute a mechanism project.			

STANDARD 4.0: Students will analyze the impact of quality on cost and productivity, product design, and manufacturing processes.

Learning Expectations		Check the appropriate Mastery or Non-Mastery column	Mastery	Non-Mastery
4.1	Analyze the relationship between process management and quality assurance.			
4.2	Evaluate the effects of quality procedures on all aspects of a manufacturing system.			

STANDARD 5.0: Students will implement quality assurance (QA) inspection and testing procedures in a manufacturing environment.

Learning Expectations		Check the appropriate Mastery or Non-Mastery column	Mastery	Non-Mastery
5.1	Inspect raw materials and intermediate products.			
5.2	Inspect and test final products.			
5.3	Design sampling plans.			

STANDARD 6.0: Students will use statistical tools to assure quality in manufacturing processes.

Learning Expectations		Check the appropriate Mastery or Non-Mastery column	Mastery	Non-Mastery
6.1	Perform statistical procedures commonly used to monitor quality in manufacturing.			
6.2	Use statistical process control concepts to evaluate and modify manufacturing processes.			

STANDARD 7.0: Students will demonstrate leadership, citizenship, and teamwork skills required for success in the school, community, and workplace.

Learning Expectations		Check the appropriate Mastery or Non-Mastery column	Mastery	Non-Mastery
7.1	Demonstrates dignity in work.			
7.2	Participate in SkillsUSA-VICA as an integral part of classroom instruction.			
7.3	Evaluate school, community, and workplace situations by applying problem-solving and decision-making skills.			
7.4	Demonstrate the ability to work professionally with others.			

Additional Comments
